

**LESSON**  
**13-3****Solving Area Equations****Reteach**

You can use area formulas to find missing dimensions in figures.

The formula for area of a parallelogram is  $A = bh$ .

The formula for area of a trapezoid is  $A = \frac{1}{2}h(b_1 + b_2)$ .

The formula for area of a rhombus is  $A = \frac{1}{2}d_1d_2$ .

The formula for area of a triangle is  $A = \frac{1}{2}bh$ .

Suppose you know the area of a triangle is 28 square feet. You also know the length of the base of the triangle is 7 feet. What is the height of the triangle?

Use the formula for area of a triangle.  $A = \frac{1}{2}bh$

Substitute known values.  $28 = \frac{1}{2}(7)h$

Multiply both sides by 2.  $56 = 7h$

Divide both sides by 7.  $8 = h$

The height of the triangle is 8 feet.

**Solve.**

1. The area of a parallelogram is 150 square meters. The height of the parallelogram is 15 meters. What is the length of the parallelogram?  
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2. The length of one diagonal of a rhombus is 8 cm. The area of the rhombus is 72 square centimeters. What is the length of the other diagonal of the rhombus?  
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3. The area of a triangle is 32 square inches. The height of the triangle is 8 inches. What is the length of the base of the triangle?  
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4. The area of a rectangle is 34 square yards. The length of the rectangle is 17 yards. What is the width of the rectangle?  
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5. The area of a trapezoid is 39 square millimeters. The height of the trapezoid is 6 millimeters. One of the base lengths of the trapezoid is 5 millimeters. What is the length of the other base of the trapezoid?  
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**LESSON**  
**13-4**

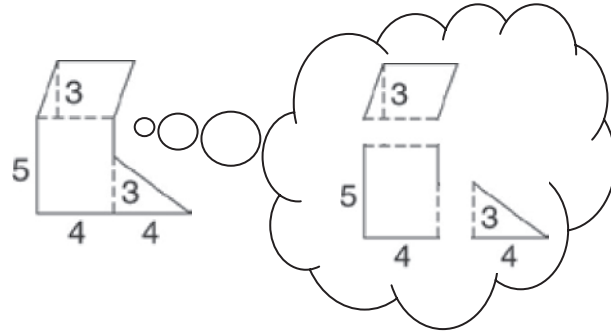
# Area of Polygons

## Reteach

Sometimes you can use area formulas you know to help you find the area of more complex figures.

You can break a polygon into shapes that you know. Then use those shapes to find the area.

The figure at right is made up of a triangle, a parallelogram, and a rectangle.



**Triangle**

$$\begin{aligned}
 A &= \frac{1}{2}bh \\
 &= \frac{1}{2}(3 \times 4) \\
 &= 6 \text{ square units}
 \end{aligned}$$

**Parallelogram**

$$\begin{aligned}
 A &= bh \\
 &= 3 \times 4 \\
 &= 12 \text{ square units}
 \end{aligned}$$

**Rectangle**

$$\begin{aligned}
 A &= lw \\
 &= 4 \times 5 \\
 &= 20 \text{ square units}
 \end{aligned}$$

Finally, find the sum of all three areas.

$$6 + 12 + 20 = 38$$

The area of the whole figure is 38 square units.

**Find the area of each figure.**

